REMARKS

Status of the Claims

Claims 1-14 are pending, with claims 1, 4, and 10 being independent. Without conceding the propriety of the rejections, claims 1, 2, 4, 5, 7 – 10, 13, and 14 have been amended to even more clearly recite and distinctly claim particularly preferred embodiments of the invention. Support for the amendments may be found in the original claims as well as throughout the specification. Therefore, no new matter has been added.

Applicants respectfully request the Examiner to reconsider and withdraw the outstanding rejections in view of the following remarks.

The Present Invention

The presently claimed invention relates to a blend of lube base oils, which provides improved oxidation stability, including combined good Oxidator A and Oxidator BN stabilities. According to the presently claimed invention, it has been discovered that lube base oils can be prepared by blending lube base oils, which have poor Oxidator A stability but good Oxidator BN stability, with lube base oils, which have good Oxidator A stability but poor Oxidator BN stability. It has been discovered that the Oxidator A and BN values do not blend linearly, and lube base oils made by blending these components have properties superior to either individual base oil. (Page 8, Paragraph [0037]; Table II; and Page 13, Paragraph [0050]).

As recited in present claim 1, the invention relates to a lube base oil comprising component (a) and component (b). Component (a) is at least one ***synthetic lube base oil*** having an ***Oxidator A value*** of ***less than about 1***. Component (b) is at least one percent of a ***non-synthetic lube base oil*** having an ***Oxidator BN value*** of ***less than about 7***. The lube base oil, as recited in claim 1, has an Oxidator A value of greater than about 1 and has an Oxidator BN value of greater than about 7.

As recited in claim 4, the invention relates to a lube base oil comprising component (a) and component (b). Component (a) is at least one ***synthetic lube base oil*** having an ***Oxidator A value*** of ***less than about 1***. Component (b) is at least one percent

of a non-synthetic lube base oil having an ***Oxidator BN value*** of ***greater than about 7***. The lube base oil, as recited in claim 4, has an Oxidator A value of greater than about 1 and has an Oxidator BN value of greater than about 7.

As recited in claim 10, the invention relates to a lube base oil comprising component (a) and component (b). Component (a) is at least one ***synthetic lube base oil*** having an ***Oxidator A value*** of ***less than about 1*** and an ***Oxidator BN value*** of ***greater than about 7***. Component (b) is a ***non-synthetic lube base oil*** having an ***Oxidator A value*** of ***greater than about 5*** and an ***Oxidator BN value*** of ***less than about 10***. The lube base oil, as recited in claim 10, has an Oxidator A value of greater than about 5 and an Oxidator BN value of greater than about 10.

As provided in the present specification, the Oxidator BN test and the Oxidator A test are two separate, standard tests for measuring the stability of lubricant base oils. Accordingly, the Oxidator BN value and the Oxidator A value are the results of the two standardized tests, respectively, for measuring the oxidative stability of the lubricant base oils. As standardized tests, the Oxidator A test values and Oxidator BN test values provide a meaningful way of comparing the oxidative stability of different lubricant base oils. These tests are set forth in USPN 3,852,207 (Strangeland et al.). (Page 6, Paragraph [0031]).

As provided in the specification and in the declaration under 37 C.F.R. 1.132, the Oxidator BN test measures the oxidative stability of lubricant base oils during simulated use. The Oxidator BN test is conducted using a Dornte-type oxygen absorption apparatus under standardized conditions as described in the specification (Page 6, Paragraph [0032]) and in the declaration. These standardized conditions include adding, to the lubricant oil to be tested, a catalyst (metal oxidation promoters) and an additive package, both of which are typically found in finished lubricants during use. The additive package used is 80 millimoles of zinc bispolypropylenephenyldithiophosphate per 100 grams of the oil to be tested.

Contrary to the Examiner's assertion, the Oxidator BN test is a standardized test that provides a meaningful value by which the oxidative stability of oils may be compared and evaluated. Therefore, the Oxidator BN value would not be varied by

changing the type of additive package used and the amount of additive package used.

The Oxidator A test is a measure of the oxidation stability of the original lubricant base oil during storage. Therefore, the catalyst and the additive package are omitted when conducting this test. The Oxidator A test is also conducted using a Dornte-type oxygen absorption apparatus under the standardized conditions of the Oxidator BN test, except for omission of the catalyst and additive package. Accordingly, the Oxidator A test provides a value that indicates the stability of the original lubricant base oil during storage. As provided above for the Oxidator BN, the Oxidator A test is a standardized test that provides a meaningful value by which the oxidative stability of oils may be compared and evaluated.

Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-14 remain rejected under 35 U.S.C. § 103(a) as being obvious over Berlowitz et al. (USPN 6,089,301) or Berlowitz et al. (USPN 6,165,949). Applicants maintain their traversal of this rejection.

Berlowitz '301 relates to a premium synthetic lubricating oil base stock. The synthetic lubricating oil base stock of Berlowitz is made by a Fischer Tropsch process. Berlowitz teaches that the base stock may be blended with one or more base stocks selected from the group consisting of (a) a hydrocarbonaceous base stock, (b) a synthetic base stock, and mixtures thereof. (Col. 2, lines 30-33). Berlowitz teaches that by hydrocarbonaceous it is meant a primarily hydrocarbon type base stock derived from a conventional mineral oil, shale oil, tar, coal liquefaction, and mineral oil derived slack wax. (Col. 5, lines 6-10). Berlowitz further teaches that typical examples of base stocks to be blended with the base stock of the invention include base stocks derived from PAO, mineral oil, mineral oil slack wax hydroisomerate, and mixtures thereof. (Col. 2, lines 33-36).

Berlowitz teaches, and in the Examples demonstrates, that Fischer-Tropsch derived base stocks are different, and most often superior to, lubricants formed of other base stocks. (Col. 2, lines 36-44). In the Examples, Berlowitz tests the oxidation resistance or stability of the base stock without any additives along with the oxidation

stability of a conventional mineral oil derived base stock (S150N). (Example 1 at Col. 10, lines 34-47, Table 5, and Example 2 and Table 6). As tested by Berlowitz, the Fischer Tropsch base stock exhibits superior stability to the conventional base stock. (Col. 10, lines 45-47, Table 5, and Table 6).

Berlowitz '949 relates to a wear resistant lubricant comprising at least 95 weight % non-cyclic isoparaffins derived from waxy, paraffinic Fischer Tropsch synthesized hydrocarbons in admixture with an effective amount of an antiwear additive. Berlowitz teaches that the amount of antiwear additive required to achieve a lubricant of a given level of wear resistance using a lubricant base stock derived from waxy Fischer Tropsch synthesized hydrocarbons is less than that required for a similar lubricating oil based on conventional petroleum oil. (Col. 1, lines 57-63). Berlowitz further teaches that the Fischer Tropsch synthesized base stocks comprising the antiwear additives demonstrate wear protection superior to a conventional mineral oil derived base stock (S150N) (Example 2, Tables 4 and 5).

In contrast, as recited in claims 1 and 4, the invention relates to a lube base oil comprising component (a) and component (b). Component (a) is at least one ***synthetic lube base oil*** having an ***Oxidator A value*** of ***less than about 1***. Component (b) is at least one percent of a ***non-synthetic lube base oil*** having an ***Oxidator BN value*** of ***greater than about 7***. The lube base oil, as recited in claims 1 and 4, has an Oxidator A value of greater than about 1 and an Oxidator BN value of greater than about 7. As recited in claim 10, the invention relates to a lube base oil comprising component (a) and component (b). Component (a) is at least one ***synthetic lube base oil*** having an ***Oxidator A value*** of ***less than about 1*** and an ***Oxidator BN value*** of ***greater than about 7***. Component (b) is a ***non-synthetic lube base oil*** having an ***Oxidator A value*** of ***greater than about 5*** and an ***Oxidator BN value*** of ***less than about 10***. The lube base oil, as recited in claim 10, has an Oxidator A value of greater than about 5 and an Oxidator BN value of greater than about 10.

It is respectfully submitted that Berlowitz does not teach or suggest a lube base oil comprising a ***synthetic lube base oil*** having an Oxidator A value of less than about 1 ***and*** a ***non-synthetic lube base oil having an Oxidator BN value of less than about 7***,

wherein the lube base oil has an Oxidator A value of greater than 1 and an Oxidator BN value of greater than 7. It is further respectfully submitted that Berlowitz does not teach or suggest a lube base oil comprising a ***synthetic lube base oil*** having an Oxidator A value of less than about 1 and an Oxidator BN value greater than about 7 ***and*** a ***non-synthetic lube base oil*** having an Oxidator A value greater than about 5 and ***an Oxidator BN value of less than about 10*** , wherein the lube base oil has an Oxidator A value of greater than 5 and an Oxidator BN value of greater than 10.

With regard to the cited art, the Examiner asserts that "a clear line of distinction between the claimed invention and the lube oil blends of the prior art is not seen to exist because component (a) at least one synthetic lube base oil, and (b) at least one percent of a non-synthetic lube base oil, may be the same." Applicants assert that it is unclear what the Examiner intends by this statement. According to the presently claimed invention, component (a) is a ***synthetic*** lube base oil and component (b) is a ***non-synthetic*** lube base oil. As such, it is clear that component (a) and component (b) are not the same.

In addition, the Examiner asserts that it is well known in the art that Fischer-Tropsh derived hydrocarbon oils are ***prone to oxidation*** because they contain almost no sulfur which is a natural antioxidant, and the Fischer-Tropsch derived oils set forth in Berlowitz ***may*** and most likely do have an Oxidator A value of less than 1 but were not characterized as such (emphasis added). However, Applicants respectfully assert that in the Examples, Berlowitz tests the oxidation resistance or stability of the base stock without any additives along with the oxidation stability of a conventional mineral oil derived base stock (S150N), and as tested by Berlowitz, the Fischer Tropsch base stock exhibits ***superior stability*** to the conventional base stock. (Example 1 at Col. 10, lines 34-47, Table 5, and Example 2 and Table 6). Based on the Examples of Berlowitz, Applicants fail to see any basis for the Examiner's assertion that it is well known in the art that Fischer-Tropsh derived hydrocarbon oils are ***prone to oxidation***.

In addition, the Examiner asserts that Berlowitz teaches that fully formulated lubricating oils may be prepared by adding to the base stock an effective amount of at least one additive, and the Examiner further asserts that although not describing the oils in terms of an Oxidator BN value, the oils of Berlowitz ***may*** be the same as the oils

applicant requires for component (b) of the claims (emphasis added). Applicants first respectfully assert that, as presently claimed, component (b) is a ***non-synthetic lube base oil.*** In contrast, Berlowitz teaches a ***synthetic*** lubricating oil base stock made by a Fischer Tropsch process. Applicants further respectfully assert that whether Berlowitz teaches that additives may be added to the Fischer Tropsh synthetic lubricating base stocks to prepare fully formulated lubricating oils is irrelevant.

As presently claimed, the ***non-synthetic lube base oil*** (i.e., component b) has an ***Oxidator BN value*** of ***less than about 7***. The Oxidator BN value of component (b) has nothing to do with the fact that additives may be added to provide a fully formulated lubricating oil. As explained above, the Oxidator BN value is the result of the Oxidator BN test, which measures the oxidative stability of lubricant base oils during similated use. The Oxidator BN test is a standardized test that provides values by which the oxidative stability of oils may be compared and evaluated.

The Examiner concludes with maintaining "the position that it is not clear that the claims at issue differ from the possible oil compositions taught by Berlowitz." In response, Applicants respectfully remind that Examiner that as provided by MPEP § 2112.01,

> Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best,* 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada,* 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the *prima facie* case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best,* 562 F.2d at 1255, 195 USPQ at 433. *See also Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985), *In re Ludtke*, 441 F.2d 660, 169 USPQ 563 (CCPA 1971); *Northam Warren Corp. v. D. F. Newfield Co.,* 7 F. Supp. 773, 22 USPQ 313 (E.D.N.Y. 1934).

Therefore, according to MPEP § 2112.01, a *prima facie* case of obvious may be rebutted by showing that the prior art does not ***necessarily*** possess the characteristics of the

presently claimed invention.

Applicants respectfully assert that such evidence was provided in the declaration under 37 C.F.R. § 1.132 by John M. Rosenbaum, an expert in the field of lubricant base oils. The declaration demonstrated that all non-synthetic lubricating base oils do ***not*** have an Oxidator BN value of less than 7, and furthermore, all non-synthetic lubricating base oils do ***not*** have an Oxidator BN value of less than 10. In fact, the Examiner acknowledges that "9 of the 38 oils tested have an Oxidator BN value less than 7 which is required by the claims." (Page 5). By demonstrating that 9 of the non-synthetic oils tested have an Oxidator BN value of greater than 7, Applicants have demonstrated that all prior art blends of a synthetic lubricant base oil and a non-synthetic lubricant base oil ***do not necessarily*** comprise a non-synthetic lubricant base oil having an Oxidator BN value of less than 7. There is no requirement that the percentage of oils tested, which demonstrate the desired property, be greater than half or some other arbitrary percentage. It is only necessary that the Applicants demonstrate that all non-synthetic lubricant base oils do not necessarily possess the presently claimed characteristics. Therefore, the Examiner's observation that "only" 9 of the 38 oils tested have an Oxidator BN value less than 7 is of no significance.

Accordingly, it is respectfully submitted that Berlowitz does not teach or suggest the presently claimed lube base oils comprising (a) a synthetic lube base oil, selected for its Oxidator A value, and (b) a ***non-synthetic lube base oil,*** selected for its Oxidator BN value, wherein the lube base oil has an Oxidator A value greater than either component and an Oxidator BN value greater than either component. Berlowitz does not teach or suggest selecting and blending synthetic and non-synthetic lube base oils in such a way as to provide a blended lube base oil with Oxidator A and Oxidator BN values superior to either individual component base oil.

Moreover, in no way does Berlowitz teach or suggest that a blend of a synthetic lube base oil having poor Oxidator A stability and a non-synthetic lube base oil having poor Oxidator BN stability provides a blended lube base oil with improved oxidation stability, including combined good Oxidator A and Oxidator BN stabilities. It is further respectfully submitted that in no way does Berlowitz teach or suggest that Oxidator A

and BN values do not blend linearly, and lube base oils, made by blending components chosen for their Oxidator A and Oxidator BN values, have properties superior to either individual base oil.

Accordingly, it is respectfully submitted that neither Berlowitz '301 nor Berlowitz '949 teach or suggest all the claim limitations. In addition, as explained above, Applicants respectfully submit that adequate evidence has been provided demonstrating that all lube base oils, comprising (a) a synthetic lube base oil and (b) a non-synthetic lube oils, do ***not*** necessarily comprise a non-synthetic lube base oil having an Oxidator BN value of less than 7. Therefore, the Examiner's prima facie case of obviousness has been rebutted.

Claims 1-14 are also rejected under 35 USC §103(a) as being obvious over Wittenbrink (USPN 6,332,974). Applicants maintain their traversal of this rejection.

Wittenbrink relates to a wide-cut lubricant base stock made from a waxy Fischer-Tropsch synthesized hydrocarbon fraction. Wittenbrink teaches that the base stocks of the invention may be combined with conventional additive packages. Wittenbrink further teaches that the base stocks of the invention may be blended with another base stock selected from the group consisting of (i) a hydrocarbonaceous base stock, (ii) a synthetic base stock, and mixtures thereof. Wittenbrink teaches that the Fischer Tropsch base stocks of the invention will have superior properties to the blends. (Col. 4, lines 40-41). Wittenbrink tests certain properties of the base stocks of the invention and compares these properties to those of a conventional lube oil fraction derived from petroleum oil. (Example 3). Wittenbrink concludes that the base stocks of the invention have superior properties to those of the conventional lubricating oil. (Example 3).

In contrast, as recited in claims 1 and 4, the invention relates to a lube base oil comprising component (a) and component (b). Component (a) is at least one ***synthetic lube base oil*** having an ***Oxidator A value*** of ***less than about 1***. Component (b) is at least one percent of a ***non-synthetic lube base oil*** having an ***Oxidator BN value*** of ***greater than about 7***. The lube base oil, as recited in claims 1 and 4, has an Oxidator A value of greater than about 1 and has an Oxidator BN value of greater than about 7. As recited in

claim 10, the invention relates to a lube base oil comprising component (a) and component (b). Component (a) is at least one ***synthetic lube base oil*** having an ***Oxidator A value*** of ***less than about 1*** and an ***Oxidator BN value*** of ***greater than about 7***. Component (b) is a ***non-synthetic lube base oil*** having an ***Oxidator A value*** of ***greater than about 5*** and an ***Oxidator BN value*** of ***less than about 10***. The lube base oil, as recited in claim 10, has an Oxidator A value of greater than about 5 and an Oxidator BN value of greater than about 10.

It is respectfully submitted that Wittenbrink does not teach or suggest a lube base oil comprising a ***synthetic lube base oil*** having an Oxidator A value of less than about 1 ***and*** a ***non-synthetic lube base oil having an Oxidator BN value of less than about 7***, wherein the lube base oil has an Oxidator A value of greater than 1 and an Oxidator BN value of greater than 7. It is further respectfully submitted that Wittenbrink does not teach or suggest a lube base oil comprising a ***synthetic lube base oil*** having an Oxidator A value of less than about 1 and an Oxidator BN value greater than about 7 ***and*** a ***non-synthetic lube base oil*** having an Oxidator A value greater than about 5 and ***an Oxidator BN value of less than about 10*** , wherein the lube base oil has an Oxidator A value of greater than 5 and an Oxidator BN value of greater than 10.

As explained above, with regard to the Examiner's assertion that "a clear line of distinction between the claimed invention and the lube oil blends of the prior art is not seen to exist because component (a) at least one synthetic lube base oil, and (b) at least one percent of a non-synthetic lube base oil, may be the same," Applicants assert that it is unclear what the Examiner intends by this statement. According to the present invention, component (a) is a ***synthetic*** lube base oil and component (b) is a ***non-synthetic*** lube base oil. Therefore, component (a) and component (b) clearly are not the same.

In addition, the Examiner asserts that Wittenbrink teaches that fully formulated lubricating oils may be prepared by adding to the base stock an effective amount of at least one additive, and the Examiner further asserts that although not describing the oils in terms of an Oxidator BN value, the oils of Wittenbrink ***may*** be the same as the oils applicant requires for component (b) of the claims (emphasis added). Applicants first respectfully assert that, as presently claimed, component (b) is a ***non-synthetic lube base***

oil. In contrast, Wittenbrink teaches lubricant base stock made from a waxy Fischer-Tropsch synthesized hydrocarbon fraction. Applicants further respectfully assert that whether Wittenbrink teaches that additives may be added to the Fischer Tropsh synthetic lubricating base stocks to prepare fully formulated lubricating oils is irrelevant.

As presently claimed, the ***non-synthetic lube base oil*** (i.e., component b) has an ***Oxidator BN value*** of ***less than about 7***. The Oxidator BN value of component (b) has nothing to do with the fact that additives may be added to provide a fully formulated lubricating oil. As explained above, the Oxidator BN value is the result of the Oxidator BN test, which measures the oxidative stability of lubricant base oils during similated use. The Oxidator BN test is a standardized test that provides values by which the oxidative stability of oils may be compared and evaluated.

The Examiner concludes with maintaining "the position that it is not clear that the claims at issue differ from the possible oil compositions taught by Wittenbrink." In response, Applicants again respectfully refer to MPEP § 2112.01. As provided above, according to MPEP § 2112.01, a *prima facie* case of obvious may be rebutted by showing that the prior art does not ***necessarily*** possess the characteristics of the presently claimed invention.

Applicants respectfully assert that such evidence was provided in the declaration under 37 C.F.R. § 1.132 by John M. Rosenbaum, an expert in the field of lubricant base oils. The declaration demonstrated that all non-synthetic lubricating base oils do ***not*** have an Oxidator BN value of less than 7, and furthermore, all non-synthetic lubricating base oils do ***not*** have an Oxidator BN value of less than 10. In fact, the Examiner acknowledges that "9 of the 38 oils tested have an Oxidator BN value less than 7 which is required by the claims." (Page 5). By demonstrating that 9 of the non-synthetic oils tested have an Oxidator BN value of greater than 7, Applicants have demonstrated that all prior art blends of a synthetic lubricant base oil and a non-synthetic lubricant base oil ***do not necessarily*** comprise a non-synthetic lubricant base oil having an Oxidator BN value of less than 7. There is no requirement that the percentage of oils tested, which demonstrate the desired property, be greater than half or some other arbitrary percentage. It is only necessary that the Applicants demonstrate that all non-synthetic lubricant base

oils do not necessarily possess the presently claimed characteristics. Therefore, the Examiner's observation that "only" 9 of the 38 oils tested have an Oxidator BN value less than 7 is of no significance.

Accordingly, it is respectfully submitted that Wittenbrink does not teach or suggest the presently claimed lube base oils comprising (a) a synthetic lube base oil, selected for its Oxidator A value, and (b) a ***non-synthetic lube base oil,*** selected for its Oxidator BN value, wherein the lube base oil has an Oxidator A value greater than either component and an Oxidator BN value greater than either component. Wittenbrink does not teach or suggest selecting and blending synthetic and non-synthetic lube base oils in such a way as to provide a blended lube base oil with Oxidator A and Oxidator BN values superior to either individual component base oil.

Moreover, in no way does Wittenbrink teach or suggest that a blend of a synthetic lube base oil having poor Oxidator A stability and a non-synthetic lube base oil having poor Oxidator BN stability provides a blended lube base oil with improved oxidation stability, including combined good Oxidator A and Oxidator BN stabilities. It is further respectfully submitted that in no way does Wittenbrink teach or suggest that Oxidator A and BN values do not blend linearly, and lube base oils, made by blending components chosen for their Oxidator A and Oxidator BN values, have properties superior to either individual base oil.

Accordingly, it is respectfully submitted that Wittenbrink does not teach or suggest all the claim limitations. In addition, as explained above, Applicants respectfully submit that adequate evidence has been provided demonstrating that all lube base oils, comprising (a) a synthetic lube base oil and (b) a non-synthetic lube oils, do ***not*** necessarily comprise a non-synthetic lube base oil having an Oxidator BN value of less than 7. Therefore, the Examiner's prima facie case of obviousness has been rebutted.

Accordingly, withdrawal of the obviousness rejections is respectfully requested.

Conclusion

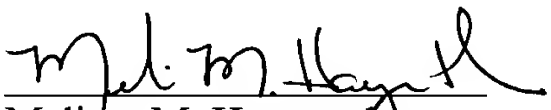
Without conceding the propriety of the rejections, the claims have been amended, as provided above, to even more clearly recite and distinctly claim Applicant's invention

and to pursue an early allowance. For the reasons noted above, the art of record does not disclose or suggest the inventive concept of the present invention as defined by the claims.

In view of the foregoing amendments and remarks, reconsideration of the claims and allowance of the subject application is earnestly solicited. The Examiner is invited to contact the undersigned at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: 

Melissa M. Hayworth
Registration No. 45,774
P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

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